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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/709,092   | 04/13/2004  | Edwin Palesch        | P7475US             | 3091             |
| 30008  | 7590        | 11/07/2005           | EXAMINER            |                  |
| GUDRUN E. HUCKETT DRAUDT<br>LONSSTR. 53<br>WUPPERTAL, 42289<br>GERMANY |             |                      | RIDDLE, KYLE M      |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 3748                |                  |

DATE MAILED: 11/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                 |                |  |
|------------------------------|-----------------|----------------|--|
| <b>Office Action Summary</b> | Application No. | Applicant(s)   |  |
|                              | 10/709,092      | PALESCH ET AL. |  |
|                              | Examiner        | Art Unit       |  |
|                              | Kyle M. Riddle  | 3748           |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2005.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Response to Amendment*

1. The arguments presented in applicant's amendment received 18 March 2005 were deemed persuasive, however, a new non-final rejection is set forth below.

### *Claim Objections*

2. Claim 10 is objected to because of the following informalities: Page 3, claim 10, last line of the claim, "of" should read --off--. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Moriya et al. (U.S. Patent 5,924,395).

Moriya et al. disclose a valve timing system comprising:

- an oil control valve 16 having a spool 76 and a solenoid 78 for driving the spool 76 configured to control a flow of a pressure medium to an advance-side oil line P1, advance-side drain port 72, retard-side oil line P2, retard-side drain port 74, and an inlet port 75 serving as an inlet for pressurized oil delivered from oil pump 15 (column 10, lines 36-48; Figure 1);

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- a camshaft adjuster or phase-changing mechanism 11 having a rotary slide valve or vane 29 fixed to the intake-side camshaft 12 to rotate integrally therewith, at least one piston or pressure-receiving portions 32 extending from the fastening portion 31 of the vane 29 and cooperating with projecting portions 33 formed on the interior of the housing 28 to form advance oil pressure chambers 13 and retard oil pressure chambers 14, the pistons or pressure-receiving protrusions 32 being acted on by fluid pressure at both advance and retard chamber sides (column 8, lines 43-65; Figures 2 and 3);

- wherein the system is adapted to set the valve timing to a predicted state during engine stop to enable higher accuracy of valve timing during the next engine start (column 5, lines 19-25, column 11, lines 35-45, column 13, lines 65-67 with column 14, lines 1-3, column 17, lines 10-15).

5. Claim 1 is further rejected under 35 U.S.C. 102(e) as being anticipated by Mikame et al. (U.S. Patent 6,386,164).

Mikame et al. disclose a valve timing control apparatus comprising:

- an oil control valve 40 with a spool 60 controlled by an electromagnetic solenoid 62 to control a flow of a pressure medium through an advancement-side oil path 38, a retardation-side oil path 39, drain ports 57, 58, and an inlet supply port 59 allowing pressurized fluid from pump 13 (column 8, lines 7-32; Figures 1 and 2);

- a camshaft adjuster or variable valve timing mechanism 12 having a rotary slide valve or rotor 19 fixedly attached to the leading end face of camshaft 11 (column 5, lines 22-27, lines 55-60; Figures 1 and 2);

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- four pistons or vanes 24 formed around boss 23 of the rotor 19 cooperating with protruding portions 25 (column 5, lines 61-67 with column 6, lines 1-7) forming advancement hydraulic chambers 30 and retardation hydraulic chambers 31, the vanes 24 being acted on by oil pressure on both sides based on control of the OCV 40 (column 7, lines 26-65; Figures 1 and 2);

- wherein when an engine stop is detected, the engine control unit ECU 65 ensures certain hydraulic pressure by controlling OCV 40 to rotate the camshaft 11 to a predetermined intermediate phase position for the next engine start (column 9, lines 7-26, lines 58-67).

*Claim Rejections - 35 USC § 103*

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2-5, 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moriya et al. or Mikame et al. in view of Kahrs et al. (U.S. Patent 5,509,383).

Moriya et al. and Mikame et al. disclose camshaft adjusters with solenoid valves, rotary slide valve, vanes or pistons acted on by a pressure medium on both sides, and securing the camshaft during engine stop to a position to facilitate engine start.

Re claims 2-5, 7-9, they, however, fail to specifically disclose an auxiliary pressure medium and storage open to the atmosphere, or an overflow from the auxiliary storage to the pressure medium storage. Kahrs et al. teach a hydraulic system for a camshaft adjusting device 6 (column 4, lines 45-47) having an auxiliary or intermediate reservoir 307 with a suction-controlled radial piston pump 309 located downstream supplying a pressurized medium, an

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overflow line 308 connecting the auxiliary or intermediate reservoir 307 to the pressure medium tank or lubricant sump 301 (column 8, lines 38-47, column 9, lines 7-13, lines 40-42), the intermediate reservoir remaining pressureless (column 3, lines 24-25). It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to have utilized the teaching by Kahrs et al. in the camshaft adjusters of Moriya et al. and Mikame et al., since the use thereof would provide an alternate pressurized medium for ensuring movement of the camshaft to the correct phase position for the next engine start.

Re claim 10, they, however, fail to disclose an auxiliary system with supply lines and pumps with certain piston positions. Kahrs et al. teach a hydraulic system with an intermediate reservoir 307 for supplying a pressure medium volume through the camshaft adjuster, control valve 311, and line 314 to the lubricant sump 301, the pump 309 being a radial piston pump 309 with many different initial positions (column 8, lines 38-61, column 9, lines 7-57; Figure 11). It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to have utilized the teaching by Kahrs et al. in the camshaft adjusters of Moriya et al. and Mikame et al., since the use thereof would provide specific piston positions for ensuring movement of the camshaft to the correct phase position for the next engine start.

8. Claims 6 and 11 are rejected under 35 U.S.C. 103(a) as being obvious over Moriya et al. or Mikame et al. in view of Kahrs et al. (U.S. Patent 5,509,383).

Moriya et al. and Mikame et al. disclose the camshaft adjusters cited above, however, fail to specifically disclose a pressurized auxiliary storage or the camshaft adjuster returning the pressure medium to the auxiliary storage after engine start.



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Kahrs et al. teach the use of an intermediate reservoir 307 with an additional pump 309 configured to adjust a camshaft (column 8, lines 38-61, column 9, lines 31-63 with column 10, lines 1-25; Figures 11 and 12). It is well known in the art to have pressurized tanks or sources of fluid for use in camshaft adjusters, and configuring the camshaft adjuster to return fluid to the intermediate reservoir 307 would have been an obvious choice to one of ordinary skill depending on space relationships, leakage considerations, reservoir capacity, and overflow. Moreover, there is nothing in the record which establishes that the application of such a pressurized auxiliary storage or return of the pressure medium to the auxiliary storage represents a novel or unexpected result (See *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975)).

### *Response to Arguments*

9. Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new ground(s) of rejection.

### *Conclusion*

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of 4 patents.

- Kano et al. (U.S. Patent 5,271,360) disclose a valve opening and closing timing control apparatus with two hydraulic pumps for rotary phase control.

- Ushida (U.S. Patent 5,823,152) discloses a phase control apparatus which positions the rotary vanes to facilitate the next engine start.

- Kohrs et al. (U.S. Patent 5,927,239) disclose a variable valve adjusting apparatus which locks the phase for engine start.

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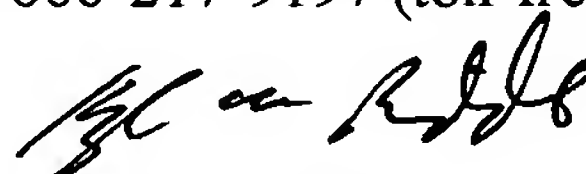
- Lancefield et al. (U.S. Patent 6,308,669) disclose a phase change coupling using torque reactions to position the camshaft at the next engine start position.

*Communication*

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kyle M. Riddle whose telephone number is (571) 272-4864. The examiner can normally be reached on M-F (07:30-5:00) Second Friday Off.

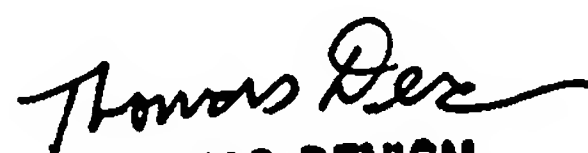
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kyle M. Riddle  
Examiner  
Art Unit 3748

kmr



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SUPERVISORY PATENT EXAMINER  
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